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10/060,980	01/29/2002	Edward T. Knobbe	67771/01-035	7827

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EXAMINER

FEELY, MICHAEL J

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 08/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/060,980

Applicant(s)

KNOBBE ET AL.

Examiner

Michael J Feely

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 and 11 is/are allowed.
- 6) ☒ Claim(s) 1,2,4,7-9,12,13,15,16 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 3,5,6,14 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Pending Claims

1. Claims 1-20 are pending.

Information Disclosure Statement

2. The information disclosure statement filed July 14, 2003 has been fully considered.

However, Applicant should be aware the required statement, as specified in 37 CFR 1.97(e), has changed. The required language is as follows:

(e) A statement under this section must state either:

(1) That each item of information contained in the information disclosure statement was *first* cited in *any* communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement; or

(2) That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in § 1.56(c) more than three months prior to the filing of the information disclosure statement.

Claim Rejections - 35 USC § 112 2nd ¶

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 15 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 15 recites a limitation for "the coating of claim 1". There is insufficient antecedent basis for this limitation in the claim because claim 1 is drawn to "A substrate having a coating". Claims 4 and 15 provide the same concentration limitation for inorganic particles with respect to the total weight of the ormosil composite. If claim 15 were intended to limit claim 1, it would be

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a duplicate of claim 4. Because of this, it appears that claim 15 was intended to limit claim 12; not claim 1.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2, 4, 7-9, 12, 13, 15, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hanke (US Pat. No. 5,112,884) and Dietz (US Pat. No. 3,975,203).

Typically, only one reference is used to make a rejection under 35 U.S.C. 102; however, according to section 2131.01 of the MPEP, a 35 U.S.C. 102 rejection over multiple references has been held to be proper when the extra references are cited to: (A) Prove the primary reference contains an “enabled disclosure”; (B) Explain the meaning of a term used in the primary reference; or (C) Show that a characteristic not disclosed in the reference is inherent.

In the instant case, Dietz is used to show the inherent characteristics of the filler used by Hanke.

Regarding claims 1, 2, 4, and 7-9, Hanke and Dietz disclose (1) a substrate having a coating thereon (Hanke: column 1, lines 4-20), the coating comprising: an ormosil composite having an organic-inorganic hybrid polymeric matrix (Hanke: column 1, line 21 through column 2, line 25) and a plurality of inorganic particles (Hanke: column 2, lines 58-66) of at least one micron entrapped therein (Hanke: column 2, line 67 through column 3, line 5; Dietz: column 2, lines 31-36); (2) wherein substantially all of said plurality of inorganic particles not being greater

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than 75 microns in its maximum dimension (Dietz: column 2, line 31-36); **(4)** wherein the concentration of inorganic particles is between 1% and 90% of the total weight of the ormosil composite (Hanke: column 2, lines 62-66); **(7)** wherein said plurality of inorganic particles are selected from the group consisting of oxides, nitrides, carbides, and carbonitrides (Hanke: column 2, line 67 through column 3, line 5; Dietz: column 2, lines 31-36); **(8)** wherein the ormosil composite is formed through the hydrolysis and condensation of organically modified silane with an alkoxide precursor (column 2, lines 23-54); and **(9)** wherein said alkoxide precursor is a non-transition metal alkoxide (column 2, lines 30-36).

Regarding claims 12, 13, 15, and 18-20, Hanke and Dietz disclose **(12)** an abrasion an corrosion resistant coating (Hanke: column 1, lines 4-20) comprising an ormosil composite, said ormosil composite including an organic-inorganic hybrid polymeric matrix (Hanke: column 1, line 21 through column 2, line 25) and a plurality of inorganic particles (Hanke: column 2, lines 58-66) of at least one micron entrapped therein (Hanke: column 2, line 67 through column 3, line 5; Dietz: column 2, lines 31-36); **(13)** wherein substantially all of said plurality of inorganic particles not being greater than 75 microns in its maximum dimension (Dietz: column 2, line 31-36); **(15)** wherein the concentration of inorganic particles is between 1% and 90% of the total weight of the ormosil composite (Hanke: column 2, lines 62-66); **(18)** wherein said plurality of inorganic particles are selected from the group consisting of oxides, nitrides, carbides, and carbonitrides (Hanke: column 2, line 67 through column 3, line 5; Dietz: column 2, lines 31-36); **(19)** wherein the ormosil composite is formed through the hydrolysis and condensation of organically modified silane with an alkoxide precursor (column 2, lines 23-54); and **(20)** wherein said alkoxide precursor is a non-transition metal alkoxide (column 2, lines 30-36).

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Regarding claims 2 and 13, it should be noted that the references use inorganic filler that is classified at 400-mesh. A 400-mesh screening process yields particles of 38 microns or less. Therefore, a filler material classified as 400-mesh meets the 75 micron or less requirement.

Allowable Subject Matter

8. Claims 10 and 11 are allowed.
9. Claims 3, 5, 6, 14, and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
10. Claim 16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Regarding claims 3 and 14, the finest material taught by Hanke and Dietz is a 400-mesh material. Although this type of classified particulate may contain particles sized at less than 5 microns, substantially all of the particles would not be sized at less than 5 microns. A particulate material sieved at 400-mesh contains particles up to 38 micron.

Regarding claims 5 and 16, Hanke and Dietz disclose a filler content of between 50 and 90 percent, preferably between 65 and 85 percent. They fail to teach or suggest a concentration range of between 5 and 30 percent.

Regarding claims 6 and 17, Hanke and Dietz are silent regarding coating thickness; however, based on the filler material used in the references, a coating thickness of between 10 and 26 microns would not be achievable.

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Regarding claims 10 and 11, Hanke and Dietz disclose a method of filling a tooth. They fail to teach or suggest a process of improving the abrasion and corrosion resistance of a metal using the claimed ormosil composite.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chiao et al. (US Pat. No. 6,472,467) disclose a similar ormosil composite; however the inorganic filler is limited to a particle size between 1 and 100 nanometers, which is smaller than the minimum requirement of the claimed invention. Albert et al. (US 2001/0051672 A1 and US 2001/0056197 A1) also teach a similar ormosil composite; however, the effective filing date of the instant invention is earlier than the effective filing date of both references.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Feely whose telephone number is 703-305-0268. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on 703-308-2340. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Michael J Feely
August 15, 2003



Robert Dawson
Supervisory Patent Examiner
Technology Center 1700